

COASTAL CONNECTIONS



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A BIMONTHLY PUBLICATION FOCUSED ON TOOLS FOR COASTAL RESOURCE MANAGERS

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COASTAL MANAGEMENT PROFILE



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Hometown: Charleroi, Belgium

Education: BS in zoology and MA in biology, San Diego State; PhD in marine sciences, University of North Carolina at Chapel Hill

Most fulfilling aspect of your job: Getting to design, develop, and lead the newest, smallest, and first-basin-based project in the NOAA Sea Grant system. It is a rare opportunity to work on something so new and open to all possibilities.

Most challenging aspect of your job: Getting the job done and done well with limited time, staff, and money.

One work-related accomplishment you're proud of: Bringing communities together to understand water quality threats and empower them to act together to protect coastal water quality, one small coastal watershed at a time.

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THIS ISSUE'S FOCUS

RISK AND VULNERABILITY ASSESSMENT

Hurricane season is upon us, which means many coastal states are turning their attention toward preparation. As they resume their emergency management planning for the season, state and local planners may be asking, "How vulnerable are we, anyway?"

A number of organizations, such as the National Oceanic and Atmospheric Administration (NOAA) and the Federal Emergency Management Agency (FEMA), have been helping states and local communities conduct risk and vulnerability assessments to help answer that question.

Assessing Your Risk

Hazard risk and vulnerability assessments help communities—from neighborhoods to entire regions—identify their risks of being affected by natural hazards, such as floods, storm surge, hurricanes, and tornadoes. These assessments also help these areas determine the chances of their resources being damaged by a hazard event.

The assessments use data and information from both social and physical science sources to analyze the environmental, social, and economic characteristics of the area. The results are then used in a geographic information system, or GIS, to create maps that display the relationships between locations and risk areas.

The most common methodology used to conduct risk and vulnerability assessments follows seven general steps:

1. **Hazards.** Prioritize the hazards that affect your area most and that leave the most damage. Depending on the scope of your assessment, this may include all the hazards that occur in your area or a more selective list.
2. **Areas with the highest "hit" potential.** Research historical records to find out which areas have been affected by hazards most often and to what degree. Create a rating system to help prioritize the list.
3. **Critical facilities.** These are the community structures and services that contain necessary people or resources for your area. These facilities can include hospitals, utility stations, schools, or police and fire stations. Compare the location of these facilities to the high-risk areas determined in step 2. If facilities are near to or within the high-risk area, consider what impacts a hazard would have on their structures and operations.

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One personal accomplishment you're proud of: Earning my PhD 19 years after flunking out of college.

Things you do in your spare time: What spare time I have is spent with three kids hiking, canoe camping, catching frogs, snow sports, cooking, boating.

Family: Wife, Mary Trexler; children Maya (6), Allie (12), and Nicholas (14)

Favorite movie: Monty Python's *Life of Brian*

In your CD player right now: Orchestra Baobab, *Specialist in All Styles*

Belgium. Pennsylvania. Nicaragua. California. Jurij Homziak has been there, done that. And for the last five years, this world traveler has settled in Vermont, working for Lake Champlain Sea Grant.

Growing up in Philadelphia, Jurij spent summers at the New Jersey shore. "I've always been fascinated about what it is that draws people to the coast."

Jurij has brought this interest to Lake Champlain, where he's working to engage communities to take charge of their watersheds. He has even enlisted the help of local schools, where middle and high schoolers learn to collect and analyze samples and provide their data to local water quality groups. "We link all of the players together piece by piece so they see they're a partnership," Jurij explains.

Jurij and his family regularly enjoy boating on Lake Champlain, the "West Coast" of New England, and often take canoe trips in the region. They reside in Burlington, Vermont.

4. **Dependent areas.** Low-income neighborhoods, areas with high elderly populations, and areas that rely heavily on public transportation may need extra attention after a storm or other hazard occurs. Consider what resources you will allot to these areas after the event.

5. **Economic centers.** Take an inventory of the area's businesses and largest employers. See how closely they are located to the high-risk areas you've already identified. Also, include the buildings of larger businesses and employers in your critical facilities list.

6. **Environmental impacts.** Imagine both the effects of each hazard and any potential secondary hazards. For instance, a flood, which affects environmental resources on its own, may induce a toxic spill, which can also severely damage the local surroundings.

7. **Mitigation opportunities.** Using the information you gathered in steps 1 through 6, decide which areas are most vulnerable. You can then start preparing your area for hazards. Take a look at the zoning of undeveloped land, since reducing development in high-risk areas will help lessen the risks to people and property. Increasing the number of people with flood insurance will also help prevent sizable losses after a storm.

South Carolina's Emergency Management Division has been conducting these kinds of assessments since 1998. Since that time, the division has begun using information from HAZUS, a FEMA software program that provides models for estimating losses from earthquakes, floods,

and hurricane winds. To help find similar information for other hazards, including heat, drought, hail, and snow, the division has enlisted the help of Dr. Susan Cutter of the University of South Carolina. Dr. Cutter has been helping the division fine-tune its methodology and update data as demographics change and different hazards affect the area each year.

According to John Knight, the risk assessment coordinator for the division, these assessments focus on population and infrastructure vulnerability. The division then uses the results of each assessment to update its state hazard mitigation plan. "In fact," adds Knight, "there are three detailed chapters in the mitigation plan that discuss hazards, their history, and their effects in the state." Much of this information comes directly from the risk and vulnerability assessments.

The assessment experience has also shown the state the areas in which it still needs more data. The biggest problem, says Knight, is the lack of information on the local tax base. "What we need is a program at the state and county levels to get that information together," Knight explains. "We could make a far, far better analysis of risk and vulnerability with an improved full database."

For information on assessing your area's risk, see "Risk and Vulnerability Tools You Can Use" on page 3 of this newsletter.

VISIT US ON THE WEB



www.csc.noaa.gov/rva_tools/

Reducing Insurance Costs

FEMA's Community Rating System

Looking to save your flood-prone community some money on its insurance premiums? The Federal Emergency Management Agency, or FEMA, has created a program called the Community Rating System that rewards communities involved in activities that encourage flood protection and management.

Under this system, communities that are already participants in FEMA's National Flood Insurance Program (NFIP) have the opportunity to earn points for any efforts above and beyond NFIP requirements. These points translate into reduced flood insurance premiums for the entire community.

For example, if a community launches an outreach campaign

to encourage homeowners to buy flood insurance, it could earn up to 300 points in the system. Once that community has earned 500 points, its members get a 5 percent reduction in their insurance premiums. If that community continues to participate in such activities, this point system could save its residents up to 45 percent off their insurance premiums.

If you think your community could benefit from this incentive program, download application materials or learn more from the Community Rating System Resource Center at <http://training.fema.gov/EMIWeb/CRS/>.

Risk and Vulnerability Tools You Can Use

www.csc.noaa.gov/rvat/

The Risk and Vulnerability Assessment Tool, or RVAT, Web site offers a plethora of information and useful tools related to coastal hazards and assessing vulnerability. Located at www.csc.noaa.gov/rvat/, the site was created as part of a project with Brevard and Volusia counties in Florida to develop and demonstrate tools and methods for assessing an area's risk. Some of the features of the site include

- Community Vulnerability Assessment Tool (CVAT). This program outlines the steps for conducting an assessment, using New Hanover County, North Carolina, as the example.
- Storm Surge Visualization. This 3-D model demonstrates how storm surge could inundate specific areas of a location. This model uses Brevard and Volusia counties as the example.
- Glossary. This section defines terms related to coastal

hazards, risks, and vulnerability assessments.

- Data Dictionary. This resource contains the data sets used to create the interactive maps.
- Hazard Locator Tool. Click on the map or enter a specific address in this tool to determine an area's level of risk for being hit by storm surge, flooding, winds, and erosion. This tool also uses Brevard and Volusia counties for the demonstration.

RVAT also includes links to various organizations involved in both the development of these tools and risk assessments in general. In addition, the site hosts a list server specifically dedicated to risk and vulnerability assessment. All the tools featured on the site can easily be adapted to your community. If you are interested in tailoring a tool for your community's needs, contact Russell Jackson at Russell.Jackson@noaa.gov.

HURREVAC

An Evacuation Decision Tool

Should I stay or should I go? As a hurricane approaches, everyone in the area, from emergency managers to weather forecasters to local residents, asks themselves that very same question. One resource for helping emergency managers make this tough decision is HURREVAC, a computer program developed by the Federal Emergency Management Agency, the U.S. Army Corps of Engineers, and NOAA's National Weather Service.

Available for use only by the emergency management community, this program uses evacuation and weather forecast data to automatically track weather information, hurricane track forecasts, and evacuation time calculations. These results are graphed together on a map so that users can see the relationships of storm times and tracks to evacuation times and routes. As a result, emergency managers can make a more informed decision on when—or if—to evacuate as a storm approaches.

Another useful feature of HURREVAC is the new inland flood planning and response tool. This feature provides the latest flood outlook, rainfall totals and forecasts, and river forecast data to help managers further track the flooding effects of a hurricane.

To find out more about HURREVAC or to register to use the program, visit www.hurrevac.com.

Coastal Connections is a publication of the National Oceanic and Atmospheric Administration Coastal Services Center, produced for the coastal resource management community. Each issue of this free bimonthly newsletter focuses on a tool, information resource, or methodology of interest to the nation's coastal resource managers.

Please send us your questions and suggestions for future editions. To subscribe or contribute to the newsletter, contact our editors at

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NEWS AND NOTES

New Web Site Investigates Coastal Impacts from Storms

A new Web site hosted by the U.S. Geological Survey's Coastal and Marine Geology Program examines the coastal impacts of hurricanes and extreme storms on the coasts of the U.S. Using Light Detection and Ranging, aerial and video photography, and ground surveys, the site's studies can help coastal managers better predict coastal change that results from severe storms. For the new Web site, visit <http://coastal.er.usgs.gov/hurricanes/>.

New Report on Changes in the Gulf of Maine

Tides of Change across the Gulf: An Environmental Report on the Gulf of Maine and Bay of Fundy summarizes the results of watershed forums held in the past two years and provides information on such issues as land use, contaminants, and fisheries. To download the document or request a CD, go to the Gulf of Maine Council's Web site at www.gulfofmainesummit.org/docs/.

Updates to National Coastal Condition Report

The Environmental Protection Agency has released the second National Coastal Condition Report, updating the 2001 report. The report aims to help environmental managers identify problems, establish trends, and evaluate their programs. For a copy of the report, go to www.epa.gov/owow/oceans/nccr2/ or call (800) 490-9198 and request EPA Publication 620/R-03/002.

Upcoming Events

July 17 to 21 is Coastal Zone 05 in New Orleans, Louisiana. Register at www.csc.noaa.gov/cz/... Mark your calendar for the Maine Beaches Conference in Wells, Maine, to be held August 17, 2005. Contact Kristen Whiting-Grant at kristen.whiting-grant@maine.edu for more information.

Transitions

Susan Snow-Cotter is the new director of the Massachusetts Office of Coastal Zone Management. Susan has been acting director since **Tom Skinner's** departure in September 2004.

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